SAFE HARBOR AGREEMENT
FOR EAST BAY MUNICIPAL UTILITY DISTRICT LANDS
IN SAN JOAQUIN, AMADOR AND CALAVERAS COUNTIES

1. INTRODUCTION

This Safe Harbor Agreement (Agreement) is entered into between the East Bay Municipal Utility District (EBMUD) and the U.S. Fish and Wildlife Service (Service); hereinafter collectively called the "Parties." The purposes of this Agreement are (1) to promote the enhancement and management of habitat for California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) on EBMUD watershed lands in San Joaquin, Amador and Calaveras counties; and (2) to provide certain regulatory assurances to EBMUD. This Agreement follows the Service's Safe Harbor Agreement policy (64 FR 32717) and regulations (64 FR 32706), both of which implement section 10(a)(1)(A) of the Endangered Species Act (ESA).

Upon approval, this Agreement will serve as the basis for the Service to issue an enhancement of survival permit (Permit) pursuant to Section 10(a)(1)(A) of the ESA. The Permit authorizes the incidental taking of California red-legged frog, California tiger salamander, and valley elderberry longhorn beetle associated with the enhancement and conservation management of these species' habitats, other lawful uses of the property (as described in Section 10 of this Agreement), and the potential future return of any eligible land to pre-Agreement conditions (baseline) within the period during which the Permit is in effect.

2. LIST OF COVERED SPECIES

This Agreement covers the following federally listed species, which are hereafter referred to as the "covered species": the California red-legged frog (CRLF), the California tiger salamander (CTS), and the valley elderberry longhorn beetle (VELB).

3. DESCRIPTION OF ENROLLED PROPERTY

The property subject to this Agreement consists of approximately 28,000 acres (11,330 hectares) of East Bay Municipal Utility District lands in San Joaquin, Calaveras and Amador counties, California, hereafter referred to as the "enrolled property." The enrolled property, which consists of about 19,710 acres of land and 9,034 acres of water surface (7,977 and 3,656 hectares respectively), is more precisely indicated on the attached map (Exhibit 1). The enrolled property borders and includes Camanche and Pardee dams and reservoirs, extending from less than 50 feet (15 m) to about 3 miles (4.8 km) from the high-water surface elevation of Camanche and Pardee reservoirs. It also includes the lands adjacent to the lower Mokelumne River for approximately ½ mile (0.8 km) below Camanche Dam. Current and recent land use practices on the enrolled property include management for water supply, flood control, grazing, aquaculture,

hydroelectric power, wastewater treatment, facility maintenance, residential use, and recreation. Habitat types[1] (and approximate area[2]) of the enrolled property include Annual Grassland (7,851 acres, 3,177 hectares), Blue Oak Woodland (4,564 acres, 1,847 hectares); Blue Oak-Foothill Pine (2,692 acres, 1,089 hectares); Chamise-Redshank Chaparral (1,623 acres, 657 hectares); Montane Hardwood (1,580 acres, 639 hectares); Mixed Chaparral (1,140 acres, 461 hectares); Barren (198 acres, 80 hectares); Urban (61 acres, 25 hectares); and, Ponderosa Pine (2 acres, 1 hectare). The amount of habitat to be restored and enhanced within the property is approximately 220 acres.

4. BASELINE DETERMINATION

The Parties agree that the baseline conditions applicable to this agreement are as detailed in this Section and in Exhibit 2. In order to receive the assurances regarding take of covered species specified in Section 10 hereof, EBMUD must maintain on the property at least as much habitat for the covered species as is shown in Exhibit 2 (Baseline Habitat).

Due to the size of the property, the difficulty of accessing much of it, the uncertainty regarding whether potentially suitable breeding sites are actually utilized by listed amphibians, and the general compatibility of existing land uses on the covered property with the conservation of such species, the baseline of upland habitat will be considered to be maintained so long as no major changes to existing uses of the property (such as conversion to row crops, commercial housing construction, or developments of comparable magnitude) are made.

5. MANAGEMENT ACTIVITIES

EBMUD will undertake the conservation management activities described in Exhibit 3 (Conservation Management Activities) on the enrolled property. The objective of such activities is to restore and maintain healthy, contiguous native plant communities that include elderberry bushes (*Sambucus* sp.) for VELB; restore and maintain suitable breeding ponds, moist refuge habitat, and upland dispersal habitat for CTS and CRLF; manage vegetation and grazing appropriate to the conservation needs of the covered species, consistent with water quality protection and fire management; control non-native predators; and implement related protection and conservation measures. It is anticipated that these activities will enhance the probability that local populations of the covered species will persist and increase. Implementation of these management activities will be initiated within 1 year after execution of this Agreement, and all Conservation Management Activities entailing restoration, development, or enhancement of habitat will be completed within 5 years after execution of this Agreement. The Conservation Management Activities – including maintenance of the restored, newly-developed, and/or enhanced habitat – will be maintained for a minimum of thirty years after execution of this Agreement.

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[1]As defined in the "California Wildlife Habitat Relationships System"and adopted by the California Department of Fish and Game. It is an adaptation of Mayer and Laudenslayer (1988).
[2]As determined by the USDA Forest Service Region 5 CALVEG GIS maps (USDA Forest Service 1981).

6. NET CONSERVATION BENEFIT

Implementation of this Agreement is expected to provide a "net conservation benefit" to the covered species, because the collective management activities performed by EBMUD pursuant to this Agreement are expected to provide an increase in the covered species' populations by restoring and maintaining the covered species' habitat.

Implementation of the conservation management activities in this Agreement are expected to enhance the probability that local metapopulations of VELB will persist by increasing the amount of elderberry bush habitat and by increasing the connectivity of habitats through replacement of non-native invasive species with native trees, shrubs (including elderberry bushes), sedges and grasses.

Both CRLF and CTS are known to breed in freshwater ponds; in some areas of the enrolled property, stock ponds represent a significant portion of available breeding sites. The stock ponds to be restored pursuant to this Agreement are existing ponds that have experienced sedimentation, have need of spillway or levee repair, or are otherwise impaired. Removal of sediments as described in Exhibit 3 (Conservation Management Activities) will increase the availability of deep water habitats for the covered species, prolong the useful life of the pond, reduce the risk of spillway or levee failure, and lessen the risk of drying out before metamorphosis of larvae. Similarly, spillway and levee repairs will also prolong the expected useful life of the ponds and reduce the risk of pond failure. Associated vegetation and grazing management will improve breeding and upland dispersal habitat conditions. The control of non-native predators will dramatically improve the ability of a pond to serve as a breeding site for CRLF and CTS. Shallow water development and management will increase useful breeding habitat, enhance and improve moist refuge habitat, and provide connectivity between and among suitable breeding habitats. The protection and management of adjacent upland habitat as provided in Exhibit 3 (Conservation Management Activities) will further enhance connectivity. Together, these measures are expected to result in an increase in the quantity and quality of breeding habitat capable of producing larger local populations that in turn are capable of dispersing over broader areas.

7. OTHER RESPONSIBILITIES OF THE PARTIES

A. In addition to carrying out the management activities set forth in Section 5 (Management Activities), EBMUD agrees to:

1. Notify the Service 30 days in advance of any planned activity on the enrolled property that EBMUD reasonably anticipates will result in "take" (i.e., death, injury, or other harm) of the covered species or a reduction in the number of living elderberry bushes with 1 or more stems of 1 inch or greater in diameter at the base; and provide the Service the opportunity to assist on avoidance and minimization measures, and capture and/or relocate the potentially affected animals or bushes, if appropriate. Emergency situations, such as wild fires, floods, epidemic disease, or other factors, may require management actions not specified in this Agreement. In these situations, the Parties acknowledge that

it may be impossible to provide the 30-day notice required by the Agreement prior to initiation of activities that could result in take of covered species. However, EBMUD will notify the Service as soon as reasonably possible after discovering such a situation (except for wild fires < 20 acres in size, which will be provided to the Service in the annual monitoring report), and will make reasonable accommodations to the Service to attempt to relocate affected individuals of the Covered Species or their host plant prior to the emergency management actions. The Parties acknowledge that relocation efforts may be precluded by certain emergency situations. EBMUD and the Service will work cooperatively to avoid impacts to Covered Species.

2. Allow the Service, or those authorized by the Service (which may include EBMUD personnel), to monitor the populations of covered species in the areas where the management activities described in Section 5 are being carried out.

3. Allow access to the enrolled property upon reasonable notice by the Service or its agents for purposes related to this agreement, including capture and relocation of the covered species. Relocation shall be to locations deemed appropriate by EBMUD.

4. Provide the Service with the annual reports described in Exhibits 4 and 5, due by March 31 of each year, which summarize the actions undertaken pursuant to this Agreement, maintenance of baseline conditions, and any observations of listed species during the preceding year.

5. Notify the Service of any injured or killed specimens of the covered species of which it becomes aware as a result of the implementation of the management actions.

6. Notify the Service of any transfer of ownership of all or portions of the enrolled property, so that the Service can attempt to contact the new owner, explain the baseline responsibilities applicable to the enrolled property, and seek to interest the new owner in signing the existing Agreement or a new one to benefit listed species on the enrolled property.

B. In consideration of the foregoing, the Service agrees to:

1. Upon execution of the Agreement, issue to EBMUD a permit in accordance with ESA section 10(a)(1)(A), and valid for a period of 30 years, authorizing take of the covered species as a result of implementing management activities, or as a result of other lawful activities on the enrolled property after the management activities have been initiated, provided that such taking shall be consistent with maintaining baseline conditions on the enrolled property.

2. Provide to EBMUD technical assistance, to the maximum extent practicable, when requested; and provide information on Federal funding programs.

8. OTHER LANDOWNERS WHO MAY SECURE INCIDENTAL TAKE AUTHORIZATION

Landowners who own land adjoining the enrolled property may, without committing to undertake any management activities described in Section 5 (Management Activities) hereof on such adjoining land, secure the incidental take authority conferred by the permit issued by the Service to EBMUD pursuant to Section 7.B.1, provided: (1) a survey undertaken on the adjoining land by a qualified person satisfactory to the Service establishes the baseline conditions on the adjoining property; and (2) the owner of the adjoining property enters into a written agreement with the Service, in which the owner agrees to maintain baseline conditions.

9. AGREEMENT AND PERMIT DURATION

The Agreement becomes effective upon issuance by the Service of the ESA section 10(a)(1)(A) permit described in Section 7 hereof, and will be in effect for 30 years. The permit will have a term of 30 years.

10. ASSURANCES REGARDING TAKE OF COVERED SPECIES

Provided that such take is consistent with maintaining the baseline conditions identified in Section 4 (Baseline Determination) hereof, the ESA section 10(a)(1)(A) permit referenced in Section 7 shall authorize the taking of covered species incidental to otherwise lawful activities by EBMUD, by its employees or agents, by neighboring landowners who have entered into agreements pursuant to Section 8 hereof, and by those authorized by law to control flooding in the Mokelumne River watershed in the following circumstances:

1. Implementing the management activities identified in Section 5 (Management Activities) hereof; or

2. Making any lawful use of the enrolled property after the management activities identified in Section 5 have been initiated, including but not limited to grazing and grazing management; growing forage crops within the Camanche Hills Hunt Club; use of registered pesticides and herbicides (provided that such use is in accordance with label restrictions and activities specified in Exhibit 3 (Conservation Management Activities)); recreation; fire prevention and control; emergency fire-fighting; prescribed burns (provided that such burns follow the procedures listed in Exhibit 3)); construction, use, and maintenance of fences, access roads, paths and trails; dam, dike, spillway, causeway, aqueduct, and powerhouse operation and maintenance; water supply and flood control operation and maintenance; existing wastewater treatment; operation and maintenance of facilities, residences, and hatchery.

11. MODIFICATIONS

A. Modification of the Agreement. Either party may propose amendments to this Agreement by providing written notice to, and obtaining the written concurrence of, the other Party. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The Parties will respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other Parties' written concurrence.

B. Termination of the Agreement. As provided for in Part 12 of the Service's Safe Harbor Policy (64 FR 32717), EBMUD may terminate this Agreement for circumstances beyond its control, without affecting its rights under this Agreement, by giving written notice to the Service. In such circumstances, EBMUD may, pursuant to the permit referenced in Section 7.B.1 hereof, return the enrolled property to baseline conditions even if the management activities identified in Section 5 have not been fully implemented.

C. Permit Suspension or Revocation. The Service may suspend or revoke the permit referenced in Section 7.B.1 above for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. EBMUD has the right to appeal any suspension or revocation to a mutually agreed upon arbitrator.

D. Baseline Adjustment. The baseline conditions for the enrolled property may be adjusted by mutual agreement of the Parties if, during the term of this Agreement and for reasons beyond the control of EBMUD (e.g., droughts, floods, wild fires, epidemic disease, climate change, etc.) the amount of suitable habitat for covered species on the enrolled property is diminished.

12. OTHER MEASURES

A. Remedies. No party shall be liable in monetary damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

B. Dispute Resolution. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

C. Succession and Transfer. As provided in Part 11 of the Service's Safe Harbor Agreement Policy, if EBMUD transfers its interest in the enrolled property to another non-Federal entity, the Service will regard the new owner as having the same rights and responsibilities, including baseline responsibilities, with respect to the enrolled property as EBMUD, if the new owner agrees and commits in writing to become a party to this Agreement and the permit referenced in Section 7 above in place of EBMUD.

D. Availability of Funds. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds.

Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

E. No Third-Party Beneficiaries. This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law. In the event that any third party successfully challenges the permit referenced in Section 7.B.1 hereof, the Service shall, at the request of EBMUD, allow EBMUD to return the enrolled property to its baseline conditions.

F. Other Listed Species, Candidate Species, and Species of Concern. In the event that other species not initially covered by this Agreement are subsequently listed as threatened or endangered under the ESA, provided that such other species are associated with habitats of the covered species, the Parties may agree to amend this Agreement and associated permit to include such other species as covered species. In addition, it is possible that other listed, proposed, or candidate species, or species of concern may occur in the future on the enrolled property as a direct result of the management actions specified in Section 5 above. If that occurs, and EBMUD so requests, the Parties may agree to amend the Agreement and associated permit to include such additional species as covered species. The amendment of the Agreement pursuant to this provision shall specify as the baseline for such subsequently covered species the lesser of the following: the amount of habitat for that species on the enrolled property that existed at the time the Agreement was signed, as determined by the baseline habitat described in Exhibit 2; or the amount of habitat for that species on the enrolled property at the time of the amendment of the Agreement, determined in a manner approved by the Parties.

G. Notices and Reports. Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

Safe Harbor Program Coordinator
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, California 95825

H. Nothing in this Agreement precludes EBMUD from expanding Pardee and/or Camanche reservoirs in the future. Should EBMUD elect to raise dam heights and enlarge reservoir capacity at Pardee and/or Camanche reservoirs, EBMUD will obtain all necessary federal or state authorizations, including authorization for take of listed species.

I. Because a portion of the enrolled property is already enrolled in the Lower Mokelumne River Safe Harbor Agreement for Valley elderberry longhorn beetle, nothing in this Agreement enlarges or diminishes any right or responsibility of EBMUD under that prior agreement, and vice versa.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Safe Harbor Agreement to be in effect as of the date that Service issues the permit referred to in Section 7.B.1 above.

_____ _____

Dennis M. Diemer Date
General Manager
East Bay Municipal Utility District

_____ _____

Susan Moore Date
Field Supervisor
U.S. Fish and Wildlife Service

Exhibit 1
Map of the Enrolled Property, Baseline Habitat, and Conservation Management Sites

Exhibit 2
BASELINE HABITAT

In order to maintain the baseline, the amounts of habitat on the enrolled property in each category must remain at least as large as recorded below. The methods that will be used to determine these baseline habitat amounts are shown under "Methods", below. EBMUD has provided to Service maps (Exhibit 1) showing the current locations of baseline habitat.

VERNAL POOL COMPLEXES
The number of vernal pool complexes is 12, composed of 37 pools with a combined maximum surface acreage of approximately 10.3 acres (4.17 hectares) (to the nearest 1/10 acre, 0.04 hectare) as measured in a "Dry" water year type[1].

BREEDING POND HABITAT FOR CALIFORNIA TIGER SALAMANDER AND CALIFORNIA RED-LEGGED FROG
The number of ponds that provide breeding habitat is 68, with a combined maximum surface acreage of approximately 35.8 acres (14.48 hectares) (to the nearest 1/10 acre, 0.04 hectare) as measured in a "Dry" water year type[1].

OTHER BREEDING HABITAT FOR CALIFORNIA RED-LEGGED FROGS
The number of sites other than ponds and vernal pools that may provide suitable breeding habitat (streams, creeks, springs) is approximately 157,524 linear feet (48,013 meters) (to the nearest foot, meter) as measured in a "Dry" water year type[1].

VALLEY ELDERBERRY LONGHORN BEETLE HABITAT
The number of elderberry bushes that have 1 or more stems 1 inch (2.54 cm) or greater in diameter at the base is 893. EBMUD shall be deemed to have maintained baseline conditions with respect to the VELB if it maintains at least that amount of elderberry bushes on the enrolled property, regardless of the location of such bushes.

METHODS

1. The acreage of vernal pool complexes, breeding pond habitat, and other breeding habitat recorded as the baseline reflect the maximum wetted acreage in the water year type(s) in which the baseline is assessed. In order to maintain the baseline, the same amount of acreage must be maintained – measured as maximum wetted acreage in the comparable water year type(s) [1].
2. Baseline vernal pool complexes: Vernal pools are seasonal depressional wetlands that are covered by shallow water for two or more consecutive weeks during winter and/or spring, but may be completely dry for most of the summer and fall. Although generally isolated, they are sometimes connected to each other by vernal swales, which – if present – are included in the baseline surface area. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool. In order to maintain the baseline, the wetted acreage of vernal pool complexes on the enrolled property must be at least as much as

measured above in a comparable water year type[1]. These baseline amounts were identified based on aerial photography and visual inspection.

3. Baseline breeding pond habitat for California tiger salamander and California red-legged frog: Breeding pond habitat shall not include reservoirs, wastewater ponds, or recreation ponds. Breeding pond habitat shall include standing bodies of fresh water (natural and man-made ponds, and other ephemeral or permanent water bodies) on enrolled property that:
   (a) Become inundated during winter rains and hold water for a minimum of 12 weeks in the winter or spring[2];
   (b) Are bordered at least in part by 173 m (567 ft) wide buffers of terrestrial habitat suitable for burrowing mammals[3]; and,
   (c) Either retain water during the dry season or have moist refuge habitat available within 200 m (656 feet)[4].

   In order to maintain the baseline, the number of ponds and the combined maximum acreage on the enrolled property must be at least as much as measured above in a comparable water year type[1]. These baseline amounts were identified based on aerial photography and visual inspection.
4. Baseline "Other" breeding habitat: "Other habitat will be included if it provides standing or slow-moving water from March through July during comparable water year types[1]. Such habitat my include streams, deep pools or backwaters within streams and creeks, marshes, and major springs. These baseline amounts identified based on aerial photography and/or visual inspection as appropriate.
5. Baseline elderberry bush habitat: In order to be included in the baseline, an elderberry bush must have 1 or more stems 1 inch (2.54 cm) or greater in diameter. For purposes of determining the baseline, a group of shoots that originates from the same root system or a group of shoots that occurs within a 5-meter (16.4 feet) radius shall be considered one bush. The baseline was calculated by estimating the number of elderberry bushes occurring in each habitat type[6] and the area of each habitat type[7] occurring on enrolled property (to the nearest 10 acres, 4 hectares). Such estimates were derived from GIS based on aerial photography, combined with visual field surveys. In order to maintain the baseline, the total number of elderberry bushes on the enrolled property must be at least as much as estimated above.

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[1] Water year types are defined by the unimpaired runoff into Pardee Reservoir as determined by the April 1st Bulletin 120 Report of the California Department of Water Resources.

[2] Note that pond management that mimics the natural water cycle, where possible, will be the most beneficial for the California red-legged frog (USFWS 2002).

[3] Trenham et al. (2001) recommended that plans to maintain local populations of California tiger salamanders should include pond(s) surrounded by at least 173-m (567-ft) wide buffers of terrestrial habitat occupied by burrowing mammals.

[4] Post-metamorphic CRLF and CTS spend much of each year on land and providing appropriate upland habitat conditions is essential to maintaining healthy populations. CRLF require above-ground vegetation for shelter. They need moist microhabitats where they can find refuge when moving around on land, especially if the pond is dry. Bulger et al. (2003) found that CRLF use dense patches of shrubs and herbaceous vegetation and, based on radio tracking, recommended protecting these resources within 100m of ponds. They also observed CRLF moving among ponds up to 3 km apart, but found no clear habitat preferences during migration. Outside of the breeding season, CTS live exclusively on land, primarily in

the burrows of ground squirrels and gophers. CTS have been found up to 2 km from any known breeding pond, although CTS adults remain more concentrated within 200 m of the pond.
A moist refuge may be formed by debris piles, dead and down trees, a trough, seep wetland, polunge pool, riparian area or the like, and must be available and moist year-round.
[5] Trenham and Shaffer (2005) estimate that in optimal habitat, 95% of CTS remain within 630m of breeding ponds.
[6] As defined in the "California Wildlife Habitat Relationships System" adopted by the California Department of Fish and Game. It is an adaptation of Mayer and Laudenslayer (1988).
[7] As determined by the USDA Forest Service Region 5 CALVEG GIS maps (USDA Forest Service 1981).

Exhibit 3
CONSERVATION MANAGEMENT ACTIVITIES

The following conservation management activities reflect current understanding of the habitat requirements of the covered species. Any conservation management activities may be changed by mutual agreement of EBMUD and the Service to reflect improved understanding of the covered species' needs or other considerations. EBMUD has provided to the Service maps (Exhibit 1) showing potential sites for Conservation Management Activities.

Conservation management activities for the benefit of the Valley elderberry longhorn beetle

- Develop 200 acres of elderberry habitat in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical.
- In these areas:
    - Plant and maintain native species typical of the canopy, subcanopy, shrub, and herbaceous layers found in Valley Foothill Riparian habitats[1], preferably with stock obtained from local sources; if elderberries already exist on the site, encourage recruitment and growth of additional elderberries via natural processes, and/or
    - Plant and maintain elderberry bushes, using local stock when practical, at a density of at least 24 bushes per acre (59 per hectare), or at a density appropriate for conditions at the site with the goal of increasing Valley elderberry longhorn beetle dispersal opportunities.
- Limit pesticide and herbicide use within these restored areas to those contact herbicides necessary to control invasive weeds; do not use aerial application of pesticides or herbicides within 100 feet (30.5 meters) of the restored area.
- Remove non-native invasive species as appropriate to facilitate restoration.
- When prescribed burns are initiated by EBMUD, take all practical measures to protect elderberry shrubs and riparian areas from damage. Whenever feasible, such prescribed burns also should be managed to foster restoration of native riparian and upland vegetation.

Conservation management activities for the benefit of the California red-legged frog and California tiger salamander

- Allow reintroduction of California red-legged frogs on the enrolled property with advance notice and in locations deemed appropriate and approved by EBMUD, if requested by the Service.
- Maintain 10.3 acres (4.17 hectares) of vernal pool complexes.
- Develop 2 acres of new shallow water habitat between 1,300 and 3,900 feet (400 and 1,200 meters) from existing breeding pond habitat[2] in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical. Any new ponds will incorporate the features described below for the restoration and maintenance of existing constructed ponds.

- Restore, and then maintain 17.3 acres of existing constructed ponds in the areas shown on Exhibit 1 or in substantially similar areas if restoration in the areas shown proves impractical. The ponds may be used to provide livestock water and will incorporate the following features when feasible:
    - Ponds will be sized and/or managed to retain sufficient water for tadpole development during the entire rearing season (January, or whenever rains commence, through late July or early August, in most years a minimum of 20 weeks); ponds can be allowed to dry during the fall (typically mid-August through early December).
    - Ponds will contain a shallow water area for tadpole and juvenile rearing. This shallow area (25 – 50 cm (10 – 20 inches) deep) should be unshaded and contain no or very short emergent plants. The shallow area will be designed so that the water warms quickly in the winter sun but is of sufficient water depth to provide aquatic habitat throughout spring.
    - Ponds also will contain a deep water escape area with portions deeper than 1 meter (3.3 feet). This deep water area should contain a mosaic of open water and dense aquatic vegetation, or dense patches of shoreline vegetation adjacent to deep water.
    - When possible, the areal extent of the shallow and deep portions of the pond should be about equal.
    - Plant species commonly found in CTS and CRLF ponds should be present, be expected to regenerate or colonize naturally, or be planted. These species include spike rushes (*Eleocharis* spp.), rushes (*Juncus* spp.), bulrushes (*Scirpus* spp.), cattails (*Typha* spp.), and willows (*Salix* spp.).
    - Partially submerged rocks, logs or other structures may be added to the pond as basking sites.
    - To the extent feasible, vegetative buffers, a sediment trap, grazing management, or other management techniques will be used upstream of the pond to reduce sediment loading.
    - Routine pond maintenance activities will be conducted outside of the CRLF and CTS breeding seasons (December through July) employing impact and avoidance and minimization measures[3].
    - When vegetation management is required, mechanical methods will be used preferentially; chemical methods also may be used September through November.
    - If mosquito control is required, bacterial larvicides will be used.
- Enhance, and then maintain other breeding habitat, and/or other shallow water habitat in the areas shown on Exhibit 1, for a total of 1,500 linear feet (457 m). Restoration shall consist of: restoring native vegetation typical of the canopy, subcanopy, shrub, and herbaceous layers found in those habitats; and controlling nonnative invasive species to the extent feasible.
- Manage pesticide applications as follows near vernal pool complexes, breeding habitat described in Exhibit 2, and new or restored shallow water habitat and ponds described in Exhibit 3:
    - Prohibit aerial application of pesticides on enrolled lands within 200 feet (61 m).

- Prohibit ground use of contact pesticides on enrolled lands within 60 feet (18.3 m).
- Exceptions to these prohibitions include the use of approved pesticides for the purpose of public health vector control when such program is administered by a public entity, and/or use of approved pesticides for the purpose of controlling state-designated invasive species and noxious weeds when such program is administered by a public entity, provided application of the pesticides shall be limited to localized spot treatments using hand-held devices and may not occur within 15 feet (4.6 m) of vernal pools or breeding ponds, nor when precipitation is occurring or is forecast to occur within 24 hours.
- Prohibit use of fumigants on enrolled lands; poison bait is allowed only if it is broadcast or put in confined bait stations.

- Control non-native predators (including, but not limited to, bullfrogs, mosquitofish catfish, crayfish) in breeding habitats described in Exhibit 2 and in new or restored shallow water habitats and ponds described in Exhibit 3 as follows:
  - Drain the ponds in the fall and winter as necessary to eliminate predatory species (typically after the first fall rains).
  - Use alternative methods to control non-native predators in shallow water habitat where such draining is inappropriate.
  - In no case will non-native predators be introduced into extant, restored or created standing bodies of freshwater (does not include reservoirs, wastewater ponds or recreation ponds).
- Enhance and/or maintain existing suitable upland dispersal and aestivation habitat within 2,067 ft (630m) of the vernal pool complexes, breeding habitats described in Exhibit 2, or new or enhanced shallow water habitats and ponds described in Exhibit 3. Enhancement may include the following features:
  - Dense patches of shrubs and low-growing grassland vegetation within 650 ft (200 m) of breeding ponds to provide habitat for CRLF.
  - Moist refuge habitat (e.g., debris piles, dead and down trees, seeps, wetland, plunge pool, riparian area, densely packed piles of rocks, or other microhabitat) available year-round within 650 ft (200 m) of breeding ponds.
  - Low-growing grassland with brushy areas and/or stands of riparian and oak woodlands within 2,067 ft (630 m) to provide habitat for CTS. This area will be managed to encourage ground squirrel and rodent burrows (>5 burrows per 323 ft^2).

  Maintenance of upland habitat does not preclude continuation of past land use practices and normal operations such as those listed in Section 10.2 of the Agreement. For purposes of this section, suitable upland habitat must be on the enrolled property and must not currently be impacted by disking or significant vehicular traffic.
- Manage livestock grazing activities according to the guidelines in Exhibit 5.
- Prohibit discing and/or grading in existing suitable upland habitats within 2,067 ft (630m) of new or restored shallow water habitats and ponds described in Exhibit 3. Exceptions to this prohibition include areas where livestock congregate or move in large numbers; growing forage crops within the Camanche Hills Hunt Club; fire

prevention and control (including emergency fire fighting); construction, use, and maintenance of access roads, paths and trails; dam, dike, spillway, causeway, aqueduct, and powerhouse operation and maintenance; water supply operation and maintenance; existing wastewater treatment; operation and maintenance of facilities, residences, and hatchery.

[1] As defined in the "California Wildlife Habitat Relationships System" adopted by the California Department of Fish and Game. It is an adaptation of the description in Mayer and Laudenslayer (1988).
[2] Marsh and Trenham (2001) determined that aggregations of amphibians at individual breeding ponds may not represent distinct populations and in many cases should not be managed as distinct units. Groups of ponds may often be a more meaningful unit of management than individual ponds. Since CTS and CRLF have been shown to disperse from 0.4 to 1.2 km from breeding ponds (Service 2002, 2004), development of shallow water habitat within the dispersal range may benefit any metapopulations on the enrolled property or neighboring properties.
[3] When conducting conservation management activities at CRLF and CTS breeding sites, or other aquatic habitats, utilize the following measures to avoid or reduce potential impacts. Prior to entering sites, remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Between sites, boots, nets, traps, etc. should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water. Avoid cleaning equipment in the immediate vicinity of a pond or wetland. Qualified biologists will perform surveys within 10 days prior to conservation management activity. CTS and CRLF found in the project site will be avoided through rescheduling activity or the CTS and CRLF adults will be temporarily held (no more than 12 hours) at the site or moved to an unaffected area. To avoid breeding and larval CTS and CRLF, conservation management activities will only be performed when the site is dry or when CTS or CRLF are absent.

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Exhibit 4
MONITORING ACTIVITIES

EBMUD will monitor the following annually and provide Service with a summary report.

- For each habitat type listed in Exhibits 2 and 3,
    - the amount of habitat maintained and/or restored during the previous year; and
    - a general summary of the condition (e.g., excellent, good. fair, poor) of these habitats.
- The month and year when management activities are initiated; and the month and year when management activities entailing restoration, development, or enhancement of habitat are completed.
- Any observations of covered species on the enrolled property.
- Any wildfires occurring on the enrolled property.
- Photos from photo points established by mutual agreement of EBMUD and Service.

EBMUD also will provide to Service the results of its monitoring for ecological indicators developed pursuant to the Mokelumne Watershed Master Plan.

Exhibit 5
LIVESTOCK GRAZING GUIDELINES

These guidelines shall apply only to the upland habitats included in Exhibit 2 (i.e., included in the baseline) and in existing, suitable upland dispersal and aestivation habitat within 2,067 ft (630m) of the new or restored shallow water habitats and ponds described in Exhibit 3. These guidelines may be changed from time to time by mutual agreement of Service and EBMUD.

EBMUD shall:

- Ensure that all pastures will not be overgrazed and that a layer of Residual Dry Matter will be maintained to minimize soil erosion and enhance the quality and quantity of forage produced.
  - Residual Dry Matter (RDM) shall mean the amount of standing, dead plant material and litter from the previous year's growth of herbaceous plants and shall be expressed in pounds per acre.
- The amount of RDM, as measured during the month of September in dry annual grassland[1] shall be as follows:

Flat Slopes (0-10%)	300 Pounds/Acre
Medium Slopes (10-20%)	400 Pounds/Acre
Moderate Slopes (20-40%)	500 Pounds/Acre
Steep Slopes (>40%)	600 Pounds/Acre

- It is recognized that local over-utilization may occur adjacent to watering facilities, corrals and salting areas. These areas will not be used to determine the RDM levels of a pasture. If the RDM levels drop below the amounts specified above, then all livestock shall be immediately removed from the affected pasture(s) until such time as EBMUD determines that said pasture(s) have recovered sufficiently for restocking.

EBMUD will provide monitoring results to Service annually, and provide copies of annual grazing plans to Service upon request. If the above thresholds are not met in a particular year, Service may require that the portions of the Annual Grazing Plans for the following year that are relevant to the upland habitats described above be reviewed by Service.

[1] Bartolome, J.W., W.E. Frost, N.K. McDougald, and M. Conner. 2002. California Guidelines for Residual Dry Matter (RDM) Management on Coastal and Foothill Annual Rangelands. University of California, Division of Agriculture and Natural Resources, Publication 8092.